



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,909	08/20/2003	Elizabeth Foster	EI-2-03-009	4754

7590 08/18/2005

Lawrence R. Fraley
Hinman,Howard & Kattell
700 Security Mutual Building
80 Exchange Street
Binghamton, NY 13901

EXAMINER

HARAN, JOHN T

ART UNIT	PAPER NUMBER
----------	--------------

1733

DATE MAILED: 08/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/643,909

Applicant(s)

FOSTER ET AL.

Examiner

John T. Haran

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 15-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/20/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-14, drawn to a method of making a circuitized substrate, classified in class 427, subclass 99.5.
 - II. Claims 15-18, drawn to a circuitized substrate, classified in class 428, subclass 209.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by a materially different process such as providing a mask over a dielectric layer, slurry coating a seed layer or an adhesive layer over the masked dielectric layer and applying a molten metal over the seed or adhesive layer and then removing the mask.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Mr. Lawrence Fraley on 6/1/04 a provisional election was made with traverse to prosecute the invention of group 1, claims 1-14. Affirmation of this election must be made by applicant in replying to this

Art Unit: 1733

Office action. Claims 15-18 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Information Disclosure Statement

6. The information disclosure statement (IDS) submitted on 8/20/03 has been considered by the examiner.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 contains the trademark/trade name TEFLON. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope

Art Unit: 1733

is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a type of dielectric polymer and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 3, 4 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by De Leeuw et al (U.S. Patent 5,620,800).

De Leeuw et al discloses a method of making a circuitized substrate wherein the substrate material of the printed circuit board can be a synthetic resin (dielectric polymer), forming an adhesion promotion layer on the dielectric polymer substrate from a conductive polyaniline solution, and then electroplating a conductive copper layer on the adhesion promotion layer to form a circuit element (Column 3, lines 5-45). De Leeuw et al anticipates claims 1, 3, 4 and 13.

Art Unit: 1733

11. Claims 1-3, 10, 11, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Boyko et al (U.S. Patent 6,212,769).

Boyko et al discloses a method for making a circuitized substrate wherein a dielectric polymer layer, such as PTFE is chemical pretreated with an adhesion promotion layer such as a solution of conductive polyacrylamide and then copper is electrolessly plated on the adhesion promotion layer to form a circuit element (Column 6, lines 1-9 and Column 7, lines 29-50). Boyko et al anticipates claims 1-3, 10, 11 and 13.

Regarding claim 14, Boyko et al teaches the electrolessly plated copper is preferably 10-25 microinches (Column 8, lines 59-61).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shelnut et al (U.S. Patent 6,899,829) optionally in view of Boyko et al (U.S. Patent 6,212,769).

Shelnut et al is directed to a method for making a circuitized substrate wherein the substrate layer of a printed circuit board is treated with a conductive polymer solution to form an adhesion promotion layer and then the adhesion promotion layer is

Art Unit: 1733

electroplated with copper to form a circuit element (Column 11, line 11 to Column 12, line 9).

Shelnut et al is silent towards the substrate of the printed circuit board being a dielectric polymer layer, however it is well known and conventional in the printed circuit board art for the substrate material to be a dielectric polymer layer, as shown for example in optionally cited Boyko et al (Column 5, line 63 to Column 6, line 20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the method of Shelnut et al to a conventional substrate material for printed circuit boards, such as dielectric polymers.

Regarding claim 2, it is well known and conventional for PTFE (TEFLON) to be the substrate material of a printed circuit board, as shown for example in optionally cited Boyko et al (Column 6, lines 15-20).

Regarding claims 3-4, Shelnut et al teaches that the adhesion promotion layer is formed from a solution of conductive polymer including pyrrole, aniline and thiophene (Column 7, lines 3-6).

Regarding claims 5-7, Shelnut et al also teaches having tin-palladium seed material in the solution (Column 7, line 38) and one skilled in the art would have readily appreciated it would have been within the purview of one skilled in the art to determine the necessary proportions of monomer and solution to obtain the desired result.

Regarding claims 8-9, Shelnut et al teaches adding an oxidant to the solution, such as sodium persulfate (Column 7, lines 8-19). It is noted that the other listed

Art Unit: 1733

oxidants are well known and conventional and it would have been obvious to use any of them in the method of Shelnut et al, as modified above.

Regarding claims 10 and 11, one skilled in the art would have readily appreciated that it is well known and conventional in the art that electroplating and electroless plating are obvious alternate expedients and it would have been obvious to form the copper plating using either method in the method of Shelnut et al, as modified above.

Regarding claim 12, Shelnut et al teaches plating and bonding multiple substrates together (Column 11, lines 23-30).

Regarding claim 13, Shelnut et al electroplates and does not sputter.

Regarding claim 14, it would have been within the skill of the ordinary artisan to plate a layer of the desired thickness and it would have been within the purview of one skilled in the art to determine the necessary thickness of the copper plating.

14. Claims 4-9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyko et al (U.S. Patent 6,212,769), as applied above to claims 1-3, 11, 13 and 14, in view of Shelnut et al (U.S. Patent 6,899,829).

Regarding claim 4, Boyko et al is silent towards using the claimed solution of conductive monomer, however such is known as shown for example in Shelmut et al as an adhesion promotion layer for plating copper. Shelnut et al teaches that the adhesion promotion layer is formed from a solution of conductive polymer including pyrrole, aniline and thiophene (Column 7, lines 3-6). One skilled in the art would have readily appreciated utilizing known adhesion promotion layers. It would have been obvious to

Art Unit: 1733

one of ordinary skill in the art at the time the invention was made to use the claimed solution of conductive monomer as the adhesion promotion layer in the method of Boyko et al, as suggestion in Shelnut et al.

Regarding claims 5-7, Shelnut et al also teaches having tin-palladium seed material in the solution (Column 7, line 38) and one skilled in the art would have readily appreciated it would have been within the purview of one skilled in the art to determine the necessary proportions of monomer and solution to obtain the desired result.

Regarding claims 8-9, Shelnut et al teaches adding an oxidant to the solution, such as sodium persulfate (Column 7, lines 8-19). It is noted that the other listed oxidants are well known and conventional and it would have been obvious to use any of them in the method of Boyko et al, as modified above.

Regarding claim 12, Shelnut et al teaches plating and bonding multiple substrates together (Column 11, lines 23-30). It would have been obvious to do the same in the method of Boyko et al, as modified above.

Conclusion

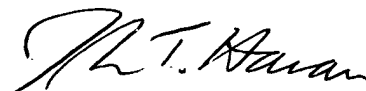
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John T. Haran whose telephone number is (571) 272-1217. The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone

Art Unit: 1733

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John T. Haran
Primary Examiner
Art Unit 1733